IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (Original): A network architecture for Wireless Intranet Office (WIO) applications, comprising:

a wireless local area network (WLAN) comprising a Wireless Mobile Center (WMC) arranged to serve as a WLAN access point;

a GSM network comprising a Mobile Station (MS) in a form of a dual-mode cellular phone to access both WLAN and GSM radio technologies, a Base Station (BS) arranged to convert a radio signal from the Mobile Station (MS) for communication, a Mobile Switching Center (MSC) arranged to establish call connection; and

a Handover Module implemented in either the Mobile Station (MS) or the Wireless Mobile Center (WMC) for providing seamless mobility between said GSM network and said wireless LAN, when the Mobile Station (MS) roams between said GSM network and said wireless LAN.

Claim 2 (Original): The network architecture as claimed in claim 1, wherein, during an IDLE mode when the Mobile Station (MS) roams from said GSM network to said wireless LAN, the Mobile Station (MS) selects a WLAN radio and attempts a location update via said wireless LAN, and a new location of the Mobile Station (MS) is updated at the Mobile Switching Center (MSC).

Claim 3 (Original): The network architecture as claimed in claim 1, wherein, during an ACTIVE handover mode when the Mobile Station (MS) initiates a handover from said GSM network to said wireless LAN, the Mobile Station (MS) measures GSM neighbor cells and reports a WLAN cell as an ordinary GSM cell, enables transmission of a handover request to the Mobile Switching Center (MSC) of said GSM network, until the Mobile Station (MS) is handed over to said wireless LAN.

Claim 4 (Original): The network architecture as claimed in claim 1, wherein, during an IDLE mode when the Mobile Station (MS) roams from said wireless LAN to said GSM network, the Wireless Mobile Center (WMC) informs GSM neighbor cells, and the Mobile Station (MS) selects a GSM radio and attempts a location update via said GSM network, and a new location of the Mobile Station (MS) is updated at the Mobile Switching Center (MSC).

Claim 5 (Original): The network architecture as claimed in claim 1, wherein, during an ACTIVE handover mode when the Mobile Station (MS) initiates a handover from said wireless LAN to said GSM network, the Mobile Station (MS) measures GSM neighbor cells, enables transmission of a handover request to the Mobile Switching Center (MSC), via the Wireless Mobile Center (WMC) of said wireless LAN, until the Mobile Station (MS) is handed over to said GSM network.

Claim 6 (Original): The network architecture as claimed in claim 1, wherein, during an IDLE mode when the Mobile Station (MS) roams from said GSM network to said wireless LAN, the Mobile Station (MS) first camps in said GSM

network, measures GSM neighbor cells for a WLAN cell, and when a WLAN transmission level is acceptable, attempts a location update, via said wireless LAN, and when the location update is accepted, camps in said wireless LAN and remains ready to make a call.

Claim 7 (Original): The network architecture as claimed in claim 1, wherein, during an ACTIVE handover mode when the Mobile Station (MS) initiates a handover from said GSM network to said wireless LAN:

said Mobile Station (MS) measures GSM neighbor cells, reports measurement results, determines if a WLAN transmission level exceeds a limit and, if said WLAN transmission level exceeds a limit, list a WLAN cell first in said measurement results;

said Base Station (BS) receives said measurement results, and indicates a handover to a WLAN cell; and

said Mobile Station (MS) is handed over to said wireless LAN.

Claim 8 (Original): The network architecture as claimed in claim 1, wherein, during an IDLE mode when the Mobile Station (MS) roams from said wireless LAN to said GSM network:

said Wireless Mobile Center (WMC) informs GSM neighbor cells; and

said Mobile Station (MS) first camps in said wireless LAN, measures a WLAN cell and informed GSM neighbor cells, determines if a WLAN transmission level drops below a limit and, if the WLAN transmission level drops below the limit, camps in said GSM network based on predetermined variables, makes a location update via said GSM network.

Claim 9 (Original): The network architecture as claimed in claim 1, wherein, during an ACTIVE handover mode when the Mobile Station (MS) initiates a handover from said wireless LAN to said GSM network:

said Mobile Station (MS) measures a WLAN cell and informed GSM neighbor cells, and sends an indication if a WLAN transmission level drops below limit;

said Wireless Mobile Center (WMC) calculates the best GSM target cell, and starts a handover;

said Base Station (BS) sends GSM neighbor cells to said Mobile Station (MS) in response to a handover attempt; and

said Mobile Station (MS) is handed over to said GSM network.

Claim 10 (Currently Amended): A network architecture, comprising:

a local radio network comprising a Wireless Mobile Center (WMC) arranged to serve as a WLAN access point;

a cellular network comprising a Mobile Station (MS) in a form of a cellular phone operable in both said local radio network and said cellular network; and

a Handover Module implemented at either the Mobile Station (MS) or the Wireless Mobile Center (WMC) to provide seamless mobility between said local radio network and said cellular network, when the Mobile Station (MS) roams between said local radio network and said cellular network.

Claim 11 (Previously Presented): The network architecture as claimed in claim 10, wherein:

said local radio network corresponds to a wireless local area network (LAN) that is located in hotspot areas or an area where a higher bit rate or high quality of service (QoS) is desired, and uses a radio technology that is different from said cellular network; and

said cellular network corresponds to a Global System for Mobile Communication (GSM) network comprising the Mobile Station (MS) in a form of a dual-mode cellular phone operable in both said wireless LAN and said GSM network; a Base Station (BS) arranged to convert a radio signal from the Mobile Station (MS) for communication, and a Mobile Switching Center (MSC) arranged to establish call connection.

Claim 12 (Canceled):

Claim 13 (Original): The network architecture as claimed in claim 11, wherein, during an IDLE mode when the Mobile Station (MS) roams from said GSM network to said wireless LAN, the Mobile Station (MS) selects a WLAN radio and attempts a location update via said wireless LAN, and a new location of the Mobile Station (MS) is updated at the Mobile Switching Center (MSC).

Claim 14 (Original): The network architecture as claimed in claim 11, wherein, during an ACTIVE handover mode when the Mobile Station (MS) initiates a handover from said GSM network to said wireless LAN, the Mobile Station (MS) measures GSM neighbor cells and reports a WLAN cell as an ordinary GSM cell, enables transmission of a handover request to the Mobile Switching Center

(MSC) of said GSM network, until the Mobile Station (MS) is handed over to said wireless LAN.

Claim 15 (Original): The network architecture as claimed in claim 11, wherein, during an IDLE mode when the Mobile Station (MS) roams from said wireless LAN to said GSM network, the Wireless Mobile Center (WMC) informs GSM neighbor cells, and the Mobile Station (MS) selects a GSM radio and attempts a location update via said GSM network, and a new location of the Mobile Station (MS) is updated at the Mobile Switching Center (MSC).

Claim 16 (Original): The network architecture as claimed in claim 11, wherein, during an ACTIVE handover mode when the Mobile Station (MS) initiates a handover from said wireless LAN to said GSM network, the Mobile Station (MS) measures GSM neighbor cells, sends a handover request to the Mobile Switching Center (MSC), via the Base Station (BS) of said GSM network, until the Mobile Station (MS) is handed over to said GSM network.

Claim 17 (Original): A method for providing seamless mobility for a Mobile Station (MS) between a GSM network having a Base Station (BS) and a Mobile Switching Center (MSC), and a wireless local area network (LAN) having a Wireless Mobile Center (WMC) arranged to serve as an access point and linked to said Mobile Switching Center (MSC) via said LAN, comprising:

during an IDLE mode in said GSM network, selecting a WLAN radio and requesting a location update at said Mobile Switching Center (MSC), via said wireless LAN;

alternatively in said wireless LAN, selecting a GSM radio and requesting a location update at said Mobile Switching Center (MSC), via said GSM network;

during an ACTIVE handover mode, measuring GSM neighbor cells to report a WLAN cell as an ordinary GSM cell, sending a handover request to said Mobile Switching Center (MSC) of said GSM network, via said Base Station (BS) of said GSM network , until a handover is completed in said wireless LAN; and

alternatively, measuring GSM neighbor cells and sending a handover request to said Mobile Switching Center (MSC), via said Wireless Mobile Center (WMC) of said wireless LAN, until said handover is completed in said GSM network.

Claim 18 (Original): The method as claimed in claim 17, wherein said Mobile Station (MS) is a dual-mode cellular phone operable in both said wireless LAN and said GSM network.

Claim 19 (Original): The method as claimed in claim 17, wherein said wireless LAN is located in hotspot areas or an area where a higher bit rate or high quality of service (QoS) is desired, and uses a radio technology that is different from said GSM network.

Claim 20 (Original): The method as claimed in claim 17, wherein said Mobile Station (MS) and said Wireless Mobile Center (WMC) are either implemented with a Handover Module for controlling said Mobile Station (MS) to handover seamlessly between said wireless LAN and said GSM network, when said Mobile Station (MS) roams between said wireless LAN and said GSM network.

Claim 21 (Currently Amended): A network architecture, comprising:

a first wireless network comprising an entity arranged to serve as an access point;

a second wireless network comprising a Mobile Station (MS) in a form of a portable phone operable to access the first wireless network and the second wireless network; and

a Handover Module implemented at one of the first wireless network and the second wireless network to provide seamless mobility between the second wireless network and the first wireless network, when the Mobile Station (MS) roams between the second wireless network and the first wireless network.

Claim 22 (Previously Presented): The network architecture as claimed in claim 21, wherein:

said first wireless network corresponds to a wireless local area network (LAN) comprising said entity as a Wireless Mobile Center (WMC) to serve as an access point; and

said second wireless network corresponds to a Global System for Mobile communication (GSM) network comprising the Mobile Station (MS) in a form of a dual-mode cellular phone to access both wireless LAN and GMS radio technologies, a Base Station (BS) arranged to convert a radio signal from the Mobile Station (MS) for communication, a Mobile Switching Center (MSC) arranged to establish call connection.

Claim 23 (Previously Presented): The network architecture as claimed in claim 22, wherein, during an IDLE mode when the Mobile Station (MS) roams from said GSM network to said wireless LAN, the Mobile Station (MS) selects a WLAN radio and attempts a location update via said wireless LAN, and a new location of the Mobile Station (MS) is updated at the Mobile Switching Center (MSC).

Claim 24 (Previously Presented): The network architecture as claimed in claim 22, wherein, during an ACTIVE handover mode when the Mobile Station (MS) initiates a handover from said GSM network to said wireless LAN, the Mobile Station (MS) measures GSM neighbor cells and reports a WLAN cell as an ordinary GSM cell, enables transmission of a handover request to the Mobile Switching Center (MSC) of said GSM network, until the Mobile Station (MS) is handed over to said wireless LAN.

Claim 25 (Previously Presented): The network architecture as claimed in claim 22, wherein, during an IDLE mode when the Mobile Station (MS) roams from said wireless LAN to said GSM network, the Wireless Mobile Center (WMC) informs GSM neighbor cells, and the Mobile Station (MS) selects a GSM radio and attempts a location update via said GSM network, and a new location of the Mobile Station (MS) is updated at the Mobile Switching Center (MSC).

Claim 26 (Previously Presented): The network architecture as claimed in claim 22, wherein, during an ACTIVE handover mode when the Mobile Station (MS) initiates a handover from said wireless LAN to said GSM network, the Mobile Station (MS) measures GSM neighbor cells, enables transmission of a

handover request to the Mobile Switching Center (MSC), via the Wireless Mobile Center (WMC) of said wireless LAN, until the Mobile Station (MS) is handed over to said GSM network.

Claim 27 (Previously Presented): The network architecture as claimed in claim 22, wherein, during an IDLE mode when the Mobile Station (MS) roams from said GSM network to said wireless LAN, the Mobile Station (MS) first camps in said GSM network, measures GSM neighbor cells for a WLAN cell, and when a WLAN transmission level is acceptable, attempts a location update, via said wireless LAN, and when the location update is accepted, camps in said wireless LAN and remains ready to make a call.

Claim 28 (Previously Presented): The network architecture as claimed in claim 22, wherein, during an ACTIVE handover mode when the Mobile Station (MS) initiates a handover from said GSM network to said wireless LAN, said Mobile Station (MS) measures GSM neighbor cells, reports measurement results, determines if a WLAN transmission level exceeds a limit and, if said WLAN transmission level exceeds a limit, lists a WLAN cell first in said measurement results, thereby allowing said Base Station (BS) to receive said measurement results, and indicate a handover to a WLAN cell before said Mobile Station (MS) is handed over to said wireless LAN.

Claim 29 (Previously Presented): The network architecture as claimed in claim 22, wherein, during an IDLE mode when the Mobile Station (MS) roams from said wireless LAN to said GSM network, said Wireless Mobile Center

(WMC) informs GSM neighbor cells; and said Mobile Station (MS) first camps in said wireless LAN, measures a WLAN cell and informed GSM neighbor cells, determines if a WLAN transmission level drops below a limit and, if the WLAN transmission level drops below the limit, camps in said GSM network based on predetermined variables, makes a location update via said GSM network.

Claim 30 (Previously Presented): The network architecture as claimed in claim 22, wherein, during an ACTIVE handover mode when the Mobile Station (MS) initiates a handover from said wireless LAN to said GSM network:

said Mobile Station (MS) measures a WLAN cell and informed GSM neighbor cells, and sends an indication if a WLAN transmission level drops below limit;

said Wireless Mobile Center (WMC) calculates the best GSM target cell, and starts a handover;

said Base Station (BS) sends GSM neighbor cells to said Mobile Station (MS) in response to a handover attempt; and

said Mobile Station (MS) is handed over to said GSM network.